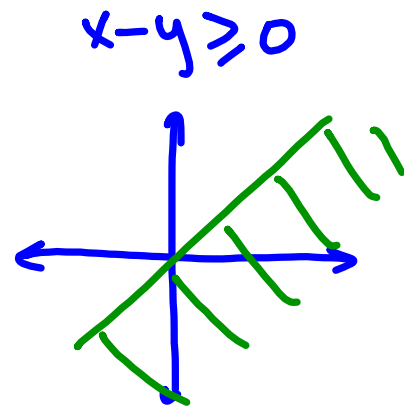


$$\text{Let } f(x,y) = \sqrt{x-y}$$

Find Domain & Range

$$D: \{(x,y) \mid x-y \geq 0\}$$

$$R: \{z \mid z \geq 0\}$$



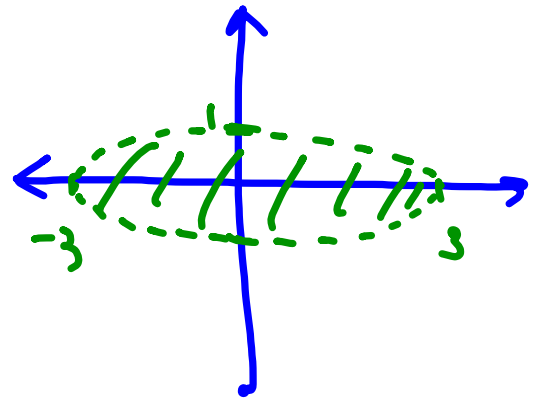
Find Domain

13.  $f(x, y) = \ln(9 - x^2 - 9y^2)$

$$9 - x^2 - 9y^2 > 0$$

$$x^2 + 9y^2 < 9$$

$$\frac{x^2}{9} + y^2 < 1$$

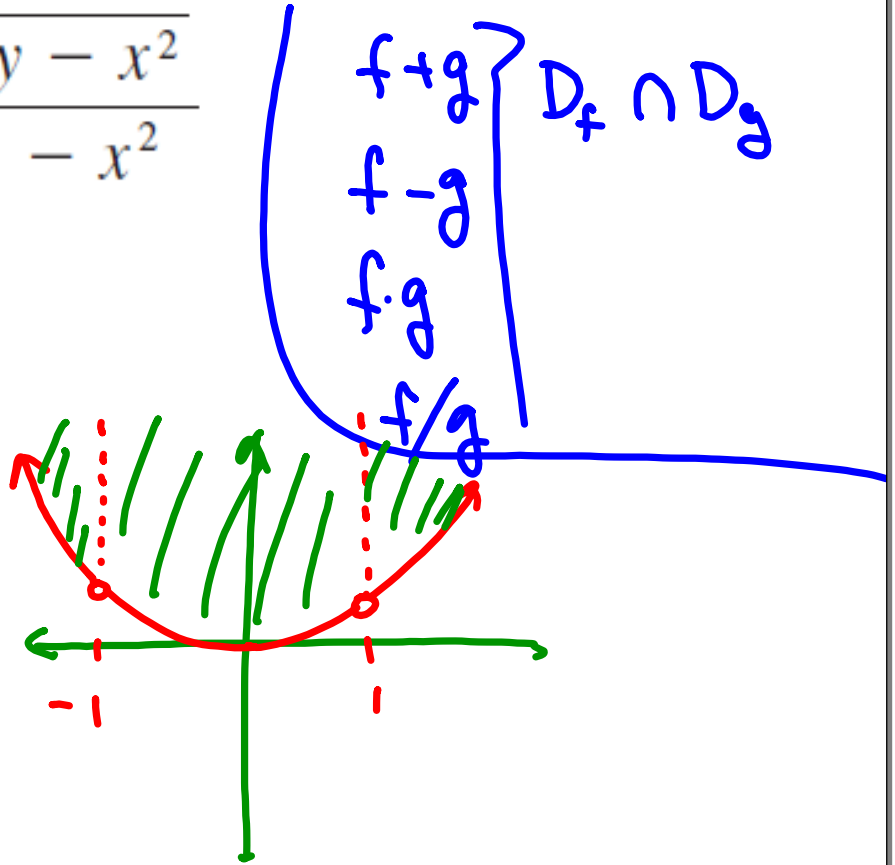


$$17. f(x, y) = \frac{\sqrt{y - x^2}}{1 - x^2}$$

$$D_N: y - x^2 \geq 0$$

$$y \geq x^2$$

$$D_D: x \neq \pm 1$$



$$19. f(x, y, z) = \sqrt{1 - x^2 - y^2 - z^2} \geq 0$$

$$D: \{(x, y, z) \mid x^2 + y^2 + z^2 \leq 1\}$$

sketch

$$23. f(x, y) = 10 - 4x - 5y$$

$$z = 10 - 4x - 5y$$

$$4x + 5y + z = 10$$

